

Amendments to the Claims

This Listing of Claims replaces all prior versions, and listings, of claims in the present application.

Listing of Claims:

Claim 1 (currently amended) An apparatus for vacuum treating two-dimensionally extended substrates, said apparatus comprising a first loadlock and processing tower, a second loadlock and processing tower, and a common vacuum transport chamber with a transport robot arrangement disposed within said vacuum transport chamber;

each of said first and said second towers comprising:

~~(a) a vacuum transport chamber with a transport robot arrangement;~~

(~~b~~ a) a processing arrangement with at least one processing station communicating by at least one workpiece pass-through opening with said vacuum transport chamber;
and

(~~e~~ b) a loadlock arrangement communicating by at least one workpiece pass-through opening with said vacuum transport chamber and by at least one further workpiece pass-through opening with an atmosphere outside said vacuum transport chamber and ~~said the associated~~ processing arrangement;

wherein the processing arrangement and the loadlock arrangement in each of the respective first and second towers are arranged vertically, one above the other.

2. (canceled)

3. (currently amended) The apparatus of claim 1 ~~[[or 2]]~~, wherein said transport robot comprises at least one substantially horizontal substrate support for at least one substrate, said substrate support being driven and controllably movable in vertical direction as well as in horizontal direction into alignment with said openings and into and from each of said ~~at least one~~ loadlock- and processing towers.

4. (original) The apparatus of claim 3, wherein said substrate support is additionally

rotatable about a vertical axis in a controllably driven manner.

5. (currently amended) The apparatus of claim 4, wherein ~~said~~ rotational movement of said substrate support is limited to at most 180°.

6. (currently amended) The apparatus of claim 5, wherein ~~said~~ rotational movement of said substrate support is limited to at most 45°.

7. (currently amended) The apparatus of claim 1 ~~[[or 2]]~~, wherein said transport robot comprises at least one horizontal substrate support for at least one substrate which support is driven exclusively in vertical and in horizontal direction, in a respectively controlled manner.

8. (currently amended) The apparatus of ~~one of claims~~ claim 1 ~~[[or 2]]~~, wherein at least one of said processing arrangements, located in the first and second towers respectively, comprises at least one substrate-batch processing module.

9. (currently amended) The apparatus of ~~one of claims~~ claim 1 ~~[[or 2]]~~, wherein at least one of said processing arrangements, located in the first and second towers respectively, comprises at least one single substrate processing module.

10. (currently amended) The apparatus of one of claims 1 ~~[[or 2]]~~, wherein at least one of said loadlock arrangements, located in the first and second towers respectively, comprises an input/output loadlock arrangement.

11. (original) The apparatus of claim 10, wherein said input/output loadlock arrangement comprises at least one single substrate input loadlock chamber.

12. (currently amended) The apparatus of claim 10, wherein said input/output loadlock arrangement comprises at least one single substrate output loadlock chamber.

13. (currently amended) The apparatus of claim 10, wherein said input/output loadlock

arrangement comprises at least one of a substrate batch input loadlock chamber, ~~[[of]]~~ a substrate batch output loadlock chamber and ~~[[of]]~~ an input/output substrate batch loadlock chamber.

14. (currently amended) The apparatus of claim ~~[[2]]~~ 1, wherein one of said loadlock and processing towers comprises one of an input and ~~[[of]]~~ an output loadlock arrangement.

15. (currently amended) The apparatus of claim ~~[[2]]~~ 1, wherein ~~exclusively two of said first and said second~~ loadlock and processing towers are ~~provided~~ arranged on opposite sides of said transport vacuum chamber and facing each other.

16. (currently amended) The apparatus of claim ~~[[2]]~~ 1, wherein ~~exclusively two of said first and said second~~ loadlock and processing towers are ~~provided~~ arranged one ~~aside~~ next to the other on one side of said vacuum transport chamber, said towers and said vacuum transport chamber ~~concomitantly thereby~~ defining ~~[[for]]~~ a U-shaped footprint.

17. (currently amended) The apparatus of claim ~~[[2]]~~ 1, wherein ~~exclusively two of said first and said second~~ loadlock- and processing towers are ~~provided~~ arranged with respect to said vacuum transport chamber ~~defining concomitantly to define~~ a Y-shaped footprint.

18. (currently amended) The apparatus of claim 1 ~~[[or 2]]~~, wherein said substrate has an extent of at least 1m^2 , ~~preferably of at least 2m^2 and even preferably of at least 4m^2 .~~

19. (currently amended) The apparatus of claim 1 ~~[[or 2]]~~, wherein each said ~~loadlock processing~~ arrangement comprises at least one of a treating and ~~[[of]]~~ a coating arrangement for at least one substrate.

20. (currently amended) A method for manufacturing two-dimensionally extended vacuum treated substrates comprising the steps of:

- ~~introducing at least one a~~ first horizontal substrate horizontally into a first loadlock chamber that is provided in a first loadlock and processing tower;
- introducing a second horizontal substrate horizontally into a second loadlock

chamber that is provided in a second loadlock and processing tower;

- transporting each said ~~at least one~~ first and second horizontal substrate horizontally -from said first and second loadlock chambers, respectively, horizontally into a common vacuum transport chamber;

- controllably moving each said first and second horizontal substrate, respectively, vertically until each is aligned with a respective first processing chamber and second processing chamber provided, respectively, in said first loadlock and processing tower and said second loadlock and processing tower up or down;

- horizontally introducing said first and second horizontal substrates into said first and second[[a]] processing chambers, respectively;

- treating said first and second horizontal substrates in said first processing chamber and said second processing chamber, respectively;

- horizontally removing said ~~each of the first and second~~ treated horizontal substrates, respectively, from said ~~the respective first and second~~ processing chamber, station and back into said common vacuum transport chamber;

- vertically transporting each said first and second treated horizontal substrate upwards or downwards within said common vacuum transport chamber until said first treated substrate is aligned with said first or a further loadlock chamber located in said first tower, and said second treated substrate is aligned with said second or a further loadlock chamber located in said second tower;

- horizontally transporting said first and second treated horizontal substrates from said common vacuum transport chamber into the respectively aligned loadlock chambers located in said first and second towers, respectively;

- removing each said first and second treated horizontal substrate horizontally from said ~~the respective~~ loadlock chamber into the ambient environment;

wherein analogous operations with respect to each of the first and second horizontal substrates are not necessarily carried out at the same time.

21. (currently amended) The method of claim 20, wherein each of thereby moving said first and second horizontal substrates is moved exclusively linearly in all of the recited steps.

22. (new) The method of claim 20, wherein different treatment processes are carried out on each of the first and second horizontal substrates in the respective first and second loadlock and processing towers.

23. (new) The method of claim 22, wherein both the first and second loadlock and processing towers, where different treatment processes are being carried out, are served by a common robot for transporting the respective first and second horizontal substrates among different chambers in each of the first and second towers, respectively.